UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY·DOCKET NO.	CONFIRMATION NO.
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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/648,148	ROEDER ET AL.
	Examiner	Art Unit	
	Chirag R. Patel	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>02 July 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19,24-42,47 and 48</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19,24-42,47 and 48</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some *   c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

Election/Restrictions

Claims 20-23, and 43-46 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic,or linking claim. Election was made **without** traverse in the reply filed on July 2, 2007. A discussion of claims 1-19, 24-42, and 47-48 is presented below.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-3, 7-8, 16, 24-26, 30-31, 39, and 47-48 are rejected under 35 U.S.C. 102(e) as being anticipated by Rexford et al. -- hereinafter Rexford (US 6,801,502).

As per claims 1, 24, 47 and 48, Rexford discloses a method for a diversified host based route selection metric, the method comprising:

using a diversified route profile table to measure a breadth of use and frequency of use for routes in a routing cache. (Col 4 lines 45-60; Col 10 lines 33-50; examiner interprets 'link costs' or 'hops' as the breadth, and 'load' as frequency of use, Col 7 line 40-64)

As per claims 2 and 25, Rexford discloses the method of claim 1, wherein data collected in the table is used by an analyzer to rank the routes. (Col 8 lines 21-54)

As per claims 3 and 26, Rexford discloses the method of claim 1, wherein the rank of the routes is used by a route selection algorithm to determine which routes in a routing table should be programmed into a network route cache. (Col 7 line 40-64, Col 8 lines 21-54)

As per claims 7 and 30, Rexford disclose the method of claim 1, further comprising: using a set of IP addresses that appear in a profile table, over a sampling period to measure the value of maintaining each route in a route cache. (Col 7 lines 40-64)

As per claims 8 and 31, Rexford discloses the method of claim 7, wherein the route cache is a routing table that only contains a subset of all the routes that are known by the router knows. (Col 8 line 55 - Col 9 line 25)

As per claims 16 and 39, Rexford discloses the method of claim 1, further comprising: using a list instead of a hash for profiling route breadth and frequency. (Col 7 lines 20-39)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-6, 9-14, 17-19, 27-29, 32-37, and 40-42 are rejected under 35 U.S.C.

103(a) as being unpatentable over Rexford (US 6,801,502) in view of Bass et al. –

hereinafter Bass (US 6,947,931)

As per claims 4 and 27, Rexford discloses the method of claim 1. Rexford fails to

disclose wherein the routing cache comprises a network route cache and a host route

cache. Bass discloses wherein the routing cache comprises a network route cache and

a host route cache. (Col 10 lines 12-26)   At the time the invention was made, it

would have been obvious to a person of ordinary skill in the art to disclose a network

route cache and a host route cache in the disclosure of Rexford. The motivation for

doing do would have been to further enhance the capabilities of the router by efficiently

searching tables with variable length patterns or prefixes with the least amount of

storage and search time. (Col 4 lines 16-44)

As per claims 5 and 28, Rexford / Bass discloses the method of claim 4. Rexford

fails to disclose wherein the use of the network routing cache is optimized such that

routes that are not used to route to a large number of destinations can be offloaded into

the host route cache. Bass discloses wherein the use of the network routing cache is optimized such that routes that are not used to route to a large number of destinations can be offloaded into the host route cache. (Col 3 line 62 – Col 4 line 2) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein the use of the network routing cache is optimized such that routes that are not used to route to a large number of destinations can be offloaded into the host route cache in the disclosure of Rexford. The motivation for doing do would have been to further enhance the capabilities of the router by efficiently searching tables with variable length patterns or prefixes with the least amount of storage and search time. (Col 4 lines 16-44)

As per claims 6 and 29, Rexford / Bass discloses the method of claim 4. Rexford fails to disclose wherein the use of the network routing cache is optimized such that routes that are used to route to a large number of destinations are stored in the network routing cache. Bass discloses wherein the use of the network routing cache is optimized such that routes that are used to route to a large number of destinations are stored in the network routing cache. (Col 3 line 62 – Col 4 line 2) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein the use of the network routing cache is optimized such that routes that are used to route to a large number of destinations are stored in the network routing cache in the disclosure of Rexford. The motivation for doing do would have been to further enhance the capabilities of the router by efficiently searching tables with variable

length patterns or prefixes with the least amount of storage and search time. (Col 4 lines 16-44)

As per claims 9 ,19, 32, and 42, Rexford discloses the method of claim 1. Rexford fails to disclose further comprising: assigning each route, in a route cache, a unique identifier that can be inserted into a recorded data for each address that is programmed into the profile table, in order to improve the efficiency of evaluating routes in the routing cache. Bass discloses further comprising: assigning each route, in a route cache, a unique identifier that can be inserted into a recorded data for each address that is programmed into the profile table, in order to improve the efficiency of evaluating routes in the routing cache. (Col 9 lines 21-51) At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose assigning each route, in a route cache, a unique identifier that can be inserted into a recorded data for each address that is programmed into the profile table, in order to improve the efficiency of evaluating routes in the routing cache in the disclosure of Rexford. The motivation for doing do would have been to further enhance the capabilities of the router by efficiently searching tables with variable length patterns or prefixes with the least amount of storage and search time. (Col 4 lines 16-44)

As per claims 10 and 33, Rexford discloses the method of claim 1. Rexford fails to disclose further comprising: using a programmable function to generate the hash value (Pkt.daIP). Bass discloses using a programmable function to generate the hash

value (Pkt.dalP). (Col 9 lines 21-51) At the time the invention was made, it would have

been obvious to a person of ordinary skill in the art to disclose using a programmable

function to generate the hash value (Pkt.dalP) in the disclosure of Rexford. The

motivation for doing do would have been to further enhance the capabilities of the router

by efficiently searching tables with variable length patterns or prefixes with the least

amount of storage and search time. (Col 4 lines 16-44)

As per claims 11 and 34, Rexford discloses the method of claim 1. Rexford fails

to disclose further comprising: varying a hash function that is used between sampling

periods for the same route set in order to improve the quality of the data that is

collected. Bass discloses varying a hash function that is used between sampling

periods for the same route set in order to improve the quality of the data that is

collected. (Col 14 lines 3-17)   At the time the invention was made, it would have been

obvious to a person of ordinary skill in the art to disclose varying a hash function that is

used between sampling periods for the same route set in order to improve the quality of

the data that is collected in the disclosure of Rexford. The motivation for doing do

would have been to further enhance the capabilities of the router by efficiently searching

tables with variable length patterns or prefixes with the least amount of storage and

search time. (Col 4 lines 16-44)

As per claims 12 and 35, Rexford discloses the method of claim 12. Rexford fails

to disclose shortening the time of the sampling period in order to obtain a more

complete list of IP addresses that are using a particular set of routes. Bass discloses shortening the time of the sampling period in order to obtain a more complete list of IP addresses that are using a particular set of routes. (Col 2 lines 21-40, Col 13 lines 12-16, Col 16 lines 15-24)   At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to shortening the time of the sampling period in order to obtain a more complete list of IP addresses that are using a particular set of routes. Bass discloses shortening the time of the sampling period in order to obtain a more complete list of IP addresses that are using a particular set of routes in the disclosure of Rexford. The motivation for doing do would have been to further enhance the capabilities of the router by efficiently searching tables with variable length patterns or prefixes with the least amount of storage and search time. (Col 4 lines 16-44)

As per claims 13 and 36, Rexford discloses the method of claim 12. Rexford fails to disclose wherein if the time of the sampling period is shortened to correspond to the length of time that it takes to transmit a single packet, then a complete list of all IP addresses that are using a particular set of routes can be generated. Bass discloses wherein if the time of the sampling period is shortened to correspond to the length of time that it takes to transmit a single packet, then a complete list of all IP addresses that are using a particular set of routes can be generated. (Col 2 lines 21-40, Col 13 lines 12-16, Col 16 lines 15-24)   At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose wherein if the time of the

sampling period is shortened to correspond to the length of time that it takes to transmit a single packet, then a complete list of all IP addresses that are using a particular set of routes can be generated in the disclosure of Rexford. The motivation for doing do would have been to further enhance the capabilities of the router by efficiently searching tables with variable length patterns or prefixes with the least amount of storage and search time. (Col 4 lines 16-44)

As per claims 14 and 37, Rexford discloses the method of claim 1. Rexford fails to disclose further comprising: adding a counter to each hash entry in a profile table, where the counter will be incremented for each time that a hash entry is written to. Bass discloses further comprising: adding a counter to each hash entry in a profile table, where the counter will be incremented for each time that a hash entry is written to. (Col 7 lines 8-15, Col 8 lines 14-22, Col 9 lines 55-62)   At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to disclose further comprising: adding a counter to each hash entry in a profile table, where the counter will be incremented for each time that a hash entry is written to in the disclosure of Rexford. The motivation for doing do would have been to further enhance the capabilities of the router by efficiently searching tables with variable length patterns or prefixes with the least amount of storage and search time. (Col 4 lines 16-44)

As per claims 17 and 40, Rexford discloses the method of claim 1. Rexford fails to disclose further comprising: using different inputs to a profiler other than the

destination address of packets. Bass discloses using different inputs to a profiler other than the destination address of packets. (Col 9 lines 21-36; hash interpreted as different input)   At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to usedifferent inputs to a profiler other than the destination address of packets. Bass discloses using different inputs to a profiler other than the destination address of packets in the disclosure of Rexford. The motivation for doing do would have been to further enhance the capabilities of the router by efficiently searching tables with variable length patterns or prefixes with the least amount of storage and search time. (Col 4 lines 16-44)

As per claims 18 and 41, Rexford / Bass discloses the method of claim 17, and Rexford discloses different inputs are used to measure the breadth and frequency of flows as well as host routes. (Col 4 lines 45-60; Col 10 lines 33-50)

Claim 15 and 38 are rejected under 35 U.S.C. 102(e) as being anticipated by Rexford et al. – hereinafter Rexford (US 6,801,502) in view of Bass (US 6,947,931) and Scoredos et al. – hereinafter Scoredos (US 2004/0250127)

As per claims 15 and 38, Rexford disclose the method of claim 1. Rexford fails to disclose adding a counter for each hash entry in a profile table, where the counter will be incremented every time the hash entry is written with the same IP address and is

reset every time the entry is written with a new IP address. Bass disclose adding a

counter for each has entry in a profile table and checking for matching destination IP

addresses. (Col 4 lines 16-44). Scoredos discloses incrementing and resetting counter

based on whether an entry exists for a destination address ([0066]) At the time the

invention was made, it would have been obvious to a person of ordinary skill in the art to

disclose adding a counter for each hash entry in a profile table, where the counter will

be incremented every time the hash entry is written with the same IP address and is

reset every time the entry is written with a new IP address in the disclosure of Rexford.

The motivation for doing do would have been to to further enhance the capabilities of

the router by efficiently searching tables with variable length patterns or prefixes with

the least amount of storage and search time. (Bass, Col 4 lines 16-44) and monitors

messages destined for a particular destination address or recipient. (Scoredos, [0002])

Conclusion

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chirag R Patel whose telephone number is (571)272-

7966. The examiner can normally be reached on Monday to Friday from 7:30AM to

4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Rupal Dharia, can be reached on (571) 272-3880. The fax phone number

for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from

the Patent Application Information Retrieval (PAIR) system. Status information

for published applications may be obtained from either Private PAIR or Public

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http://pairdirect.uspto.gov. Should you have questions on access to the Private

PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197

(toll free).

Chirag Patel
Patent Examiner
AU 2141

C.P.

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